

Serial No. 09/883,342  
Reply to Office Action of April 28, 2004  
Reply dated July 27, 2004

Docket No. K-0075A

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

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1. (Currently Amended) A method for determining a frame quality in a mobile communication system comprising the steps of:

*a<sup>11</sup>*  
estimating a signal to noise power interference ratio of an allocated traffic channel from power control bits (PCBs) extracted from power control groups (PCGs) of a frame received through the traffic channel and a signal received through a pilot channel received during a section of the PCGs in a control hold state based on multiplying a bit to symbol rate ratio of a full rate by a value obtained by dividing a power for a traffic channel of the full rate by interference in a control hold state; and

comparing the estimated signal to noise power interference ratio with a preset reference signal to noise power ratio to determine the quality of the received frame.

2-3. (Canceled)

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4. (Currently Amended) The method of claim 2, wherein the ~~noise power interference~~ is the sum of the ~~power of interference signals by users in one cell and different cells~~ interference of a same cell and another cell.

5. (Currently Amended) The method of claim 1, ~~wherein a corresponding mobile station or system controls further comprising:~~

controlling a power control reference value to maintain [[its]] a target frame error rate in accordance with a corresponding mobile station or system based on the determined frame quality.

6. (Currently Amended) The method of claim 1, wherein an erasure indicator bit value which ~~will be used to control transmitting power of an opposing mobile station or system~~ is determined ~~in accordance with~~ based on the determined frame quality to control a transmit power.

7. (Currently Amended) The method of claim 1, ~~wherein a corresponding mobile station or system checks a channel of a received signal and determines further comprising:~~ determining whether to drop a set call based on a frame quality indicator.

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8. (Currently Amended) An apparatus for determining a frame quality in a mobile communication system comprising:

~~a PCB extracting unit for extracting PCBs from PCGs of a frame received through an allocated traffic channel in a state that no data transmission occurs between a mobile station and its control system and the PCBs are only transmitted and received through the traffic channel;~~

*AI*  
an SIR (Signal to Interference Ratio) estimating unit for estimating a signal to noise power interference ratio of the traffic channel from the extracted PCBs and a signal received through a pilot channel received during a section of the PCGs based on multiplying a bit to symbol rate ratio of a full rate by a value obtained by dividing a power for a traffic channel of the full rate by interference in a control hold state; and

a comparator for comparing the estimated signal to noise power interference ratio with a preset reference value to generate a quality indicator bit of the received frame to determine the quality of the frame.

9. (Currently Amended) The apparatus of claim 8, wherein the noise power interference is the sum of ~~the power of interference signals by users in one cell and different cells~~ interference of a same cell and another cell.

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10-11. (Canceled)

12. (Currently Amended) The apparatus of claim 8, wherein a corresponding mobile station or system controls, further comprising:  
a controller for controlling a power control reference value to maintain [[its]] a target frame error rate in accordance with a corresponding mobile station or system based on the quality indicator bit.

13. (Currently Amended) The apparatus of claim 8, wherein an erasure indicator bit value which will be used to control transmitting power of an opposing mobile station or system is determined in accordance with based on the quality indicator bit to control a transmit power.

14. (Currently Amended) The apparatus of claim [[1]] 8, wherein a corresponding mobile station or system checks a channel of a received signal and determines whether to drop a set call based on a frame quality indicator.

15. (New) The method of claim 1, wherein the control hold state corresponds to a state when only Power Control Bits (PCBs) are transmitted.

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16. (New) A method for determining a frame quality in a mobile communication system, comprising:

determining a quality of the frame received through an allocated traffic channel in a control hold state in which only Power Control Bits (PCBs) are transmitted, wherein the quality of the frame is determined by estimating a signal to interference ratio based on the traffic channel and a pilot channel during the control hold state.

17. (New) The method of claim 16, further comprising:  
comparing the estimated signal to interference ratio with a preset reference value to determine the quality of the frame.

18. (New) The method of claim 16, further comprising:  
extracting at least one of the PCBs from power control groups of the frame.

19. (New) The method of claim 16, wherein the signal to interference ratio is estimated by a power of the traffic channel based on the power control bit and a power of the pilot channel.

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20. (New) The method of claim 16, wherein the signal to interference ratio is estimated by multiplying a bit to symbol rate ratio of a full rate by a value obtained by dividing the power for the traffic channel of the full rate by the interference.

21. (New) The method of claim 16, wherein a power of the traffic channel is estimated based on a power control bit power and a pilot channel power corresponding to the power control bit.

22. (New) The method of claim 16, wherein an erasure bit is determined based on

*Q1* the determined frame quality to control a transmitting power:

23. (New) The method of claim 16, further comprising:

determining whether to drop a set call based on a frame quality indicator.

24. (New) The method of claim 16, further comprising:

transmitting a frame quality indicator generated based on the determined frame quality.